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Division Director's Report

This article of the OpenLine will discuss an audit which EPA performed on the Division of Drinking Water's operations in August of 2010 and April of 2011. Their findings were transmitted to the Division on January 31, 2012. The focus of this audit was the implementation of the National Primary Drinking Water Regulations. The audit also included primacy (primary responsibility to implement the federal regulations) issues such as: plan reviews, source protection, operator certification and the State Revolving Fund (SRF). To indicate how extensive the audit was, there are specific sections in the audit report that cover: a) the Division's funding, b) personnel numbers devoted to the various programmatic functions, c) data systems, d) the plan reviews, e) sanitary surveys, f) the SRF program, g) enforcement, h) source protection, i) operator certification, j) capacity development, and k) implementation of specific EPA rules including: i) the Surface Water Treatment Rule, ii) the Disinfection Bi-product Rule, iii) the Coliform rule, iv) the Groundwater rule, v) the Lead/Cooper rule, vi) the Inorganic Contaminate Rule, vii) the Phase II/V rule, viii) the Arsenic rule, ix) the Radionuclide rule, x) the Consumer Confidence Report rule, and xi) the Public Notification. A copy of the audit report and my response letter can be found on our website: <http://www.drinkingwater.utah.gov>. Once there, look in the left column for: "About DDW" and click on it. This will take you to a summary page about the functions of each Section within the Division. At the top of this page is a link to both documents.



Ken Bousfield- Director

The Audit Findings: I will spend the remainder of this article talking about the findings, and conclusions of the audit and that will be followed by my assessment of the audit's implications for the state of Utah. First of all, the funding describes how the state is heavily funded by federal grants. Nearly 75% of our operating budget comes from federal sources. It also references the need for State matching funds in order to qualify to receive the federal funding.

The audit covers the staffing levels that the Division employees to accomplish all of the tasks required under the primacy requirements. There is an interesting table on page 7 of the report that quantifies how the Division is significantly understaffed, in the eyes of the EPA auditors, to fully implement the federal primacy requirements. The table show where we're at about 64% of needed staffing levels.

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“A recurring theme in this section of the audit report is the limited number of staff devoted to each rule.”

Director's Report Continued

Under the section of databases, the report talks about some of the innovative strategies we've used to further the capabilities of the existing staff. The report also outlines the workload associated with plan reviews and a table is provided that shows the workload is increasing over time.

In the discussion of sanitary survey (on-site inspections) the report describes the current efforts and how that will be increased when we implement the Ground Water Rule and the Surface Water Treatment Rule to their fullest extent. The report also discusses the option of performing surveys on a 5 year frequency depending on system classification and performance. The report gives a brief description of the State's State Revolving Fund (SRF) used to assist water systems in building infrastructure. More detail regarding the SRF program was not given due to the fact that SRF programs are given a separate audit by other EPA personnel on a yearly basis.

In the discussion regarding enforcement the report cites the Division's lack of tracking milestones as a problem. The Source Protection section of the audit report talks about the limited staff that is spread thin by related duties. The Operator Certification section of the audit report draws attention to the correlation between certified operators and increased compliance rates for water systems employing certified operators.

The audit report goes into detail regarding the Division's efforts to implement EPA's regulations. A recurring theme in this section of the audit report is the limited number of staff devoted to each rule. The audit report did highlight problems with three specific rules: 1) The Groundwater Rule, 2) the Lead/Copper Rule and 3) the Arsenic Rule. The Groundwater rule was mentioned because of its relative newness and the inexperience of staff in implementing it. The Lead/Copper Rule and the Arsenic Rule were mentioned because of the incomplete effort in properly identifying and enforcing monitoring violations and properly following up with action levels and MCL's.

The Audit's Conclusions:

The conclusions of the audit report are as follows:

None of the current Drinking Water Rules are being fully implemented in all respects due to limited resources.

Limited resources are focused on public health issues and return to compliance assistance, with enforcement taking a secondary priority.

Timely and complete data entry and consistent use of SDWIS (the federal database used to track compliance with federal regulations) is a recurring problem noted within most rules.

Further cuts in funding could have significant negative impacts on the ability of Utah DDW to meet minimal requirements.

The volume of work entailed in tracking, reporting, compliance determination, and enforcement limits existing Rule Managers' ability to provide proactive technical assistance to public water systems, resulting in violations that could be avoided. Personnel stability and the high quality of personnel are allowing Utah DDW to meet most of its obligations with only marginal staffing. However,



Director's Report Continued

any loss of experienced personnel will significantly degrade Utah DDW's performance.

Implementation of the new Groundwater Rule is stretching current resources and may cause further program degradation.

The audit's implications:

The audit seems to accurately describe the conditions of the State's drinking water program for the indicated timeframe. Now, after a little over a year later, there have been some changes which are listed below. There is also some new challenges related to federal funding (remember that 75% of the Division's funding comes from federal sources) that make the findings of the audit potentially more ominous. At the present time Congress and the President are in negotiations relative to the funding of federal programs, and the potential for significant cuts may occur in the future. In the recent past, we have seen evidence of this as the SRF monies have been decreasing with recent allocation. Further, the federal government is operating on what is known as a "continuing resolution", which means the federal government may continue to spend, at a reduced rate, based on the budget of the previous year.

Because of the uncertainty of this, EPA has only authorized half of our State Revolving Fund (SRF) Loan money. This means that less money is available for building infrastructure. In addition to this concern there is a Division operational funding issue as well. This is because there is the option for the state to legally take, what is known as "Set Aside" money, from the federal SRF Grant to implement the federal Safe Drinking Water Act and its attendant programs. This allowance, as stated in the federal Safe Drinking Water Act, is an open acknowledgment that federal funding for drinking water programs is significantly inadequate. Interestingly, there is a parallel SRF program to fund waste water projects. However, on the wastewater side, there is not a parallel set aside provision in their enabling legislation.

This nuance was overlooked last year when EPA passed the majority of its budget cut onto the states. Further they focused the majority of the pass through cut on the two SRF programs (drinking water and wastewater), thinking that it would not impact state programs. The assumption was true for the wastewater program, but was harmful to drinking water programs, because set asides are based on a percentage of the SRF grant. Consequently, with a lower grant award, the same percentage of a lower dollar amount yields a cut in operating funds for drinking water programs.

The obvious remedy to resolve and improve the findings of the audit is to expand more resources, and hire more staff to address the program deficiencies. Rather than increased funding, it is more likely that we will see cuts in the federal expenditure which would hamper the Division's ability to carry out its mission. There are two issues that will come into play, nationally, as states attempt to retain primacy: 1) the reluctance of EPA to actually take primacy back, because they fully understand what's involved to fully implement the various rules and requirements, and 2) we in Utah are better off than other states relative to our ability to retain primacy.



"EPA has only authorized half of our State Revolving Fund (SRF) Loan money. This means that less money is available for building infrastructure."





“The Division sees the reduction of survey frequencies as a work load increase and potential efficiency lost”

Director’s Report Conclusion-

This is because the Division was able to weather the recent downturn in the economy without cutting staff. This was not the case with many states. Some states experienced staff reductions of significant proportions. Now those same states will have to go through that process again to accommodate federal budget cuts. These states will likely be the first to give up primacy. With selected states losing primacy, that may be the wakeup call for congress to either reduce primacy requirements or increase funding for state drinking water programs.

On another matter, one recommendation given in the audit report to decrease the workload on the Division was to institute a five year frequency for sanitary surveys. What the recommendation did not clarify was the conditions necessary for a water system to qualify for the reduced frequency. This includes: a) the maintenance of a perfect bacteriologic monitoring and quality record between sanitary surveys and b) be an optimal performer. These elements require the Division to review up to a 5 year history of bacteriologic history, and define and track optimal performance. Both the definition and tracking scheme, of optimal performance, would need EPA approval before we could implement it. The additional scrutiny by staff is coupled with the issue of water systems going into and coming out of the reduced frequency schedule. Changing schedules would frustrate our initiative to combine water systems into logical groups to gain efficiencies by performing surveys of close by water systems sequentially to reduce travel time. Hence the Division sees the reduction of survey frequencies as a work load increase and potential efficiency lost. Consequently, we’ve made the decision to standardize the frequency of surveys for all water systems.

The audit report makes specific observations about our ability to adequately track compliance with the Arsenic Rule and the Lead/Copper Rule. These issues have been reported in previous program reviews by EPA and we were in process of addressing the issues during the actual performance of the audit. Specifically, we’ve replaced the employee that was responsible for these two rules with a new employee that has been diligently addressing past inaction by the Division and aggressively implementing these rules going forward. We anticipate that we’ll have a better audit finding regarding these two rules in the future.

The audit report also cites the Division’s lack of tracking and follow-up on milestones associated with enforcement actions. To address this issue, the Division hired a paraprofessional to track all milestones associated with Bilateral Compliance Agreements, Administrative Orders and Attorney General Referrals.

Conclusions: The Division is committed to retaining primacy as we are in a better position to assist water systems with compliance with the many rules. Further, the Division has and will continue to partner with the Intermountain Section of the American Water Works Association, the Rural Water Association of Utah and the local health departments in our efforts to assist. Secondly, the Division needs to take the long view in looking for sufficient resources to carry out its mission. A discussion on retaining primacy, the long view, will be a subject for a future article in the OpenLine.

Hydraulic Modeling from an Operator Perspective

Looking Beyond the Rule Requirements

by Tammy North

The hydraulic modeling rule (R309-511) has now been in effect for more than three years. Have you embraced it? Or are you one of the ones who is still pushing back or doing only what is necessary to meet the requirements? If you fall into the latter category, it is time to reevaluate and start making hydraulic modeling work for you!



Not just a regulation- utilizing modeling as a tool

The hydraulic modeling rule's purpose as stated in R309-511-1 is "to ensure that the increased water demand created by new construction will not adversely affect existing or new water users". When the Division of Drinking Water reviews plans with hydraulic modeling information, it is to ensure that this purpose is being achieved. But a hydraulic model is a very powerful tool and has the ability to go beyond Drinking Water's purpose, to accomplish the purposes of your individual water system! It is time to look beyond the regulation of hydraulic modeling and start seeing it as a tool. The majority of the work and cost associated with a hydraulic model is in building the basic model. Costs to maintain and run the model after it has been established are relatively economical. The rule requirement has established the tool for you, now it is time for you to start using it.

Scenarios where the model could help you.

A hydraulic model is simply a computer simulation of your water system. It allows you to "play" with your system to see how potential changes will affect the system without actually disrupting the system itself. There are two key benefits from a management standpoint. The model helps to save money as designs are optimized and eliminates interruption of the system through trial and error adjustments.

Below are just a few examples of potential situations where you might utilize the model beyond what is required for regulation.



-Operational Modifications- On occasion, you might want to make adjustments in your system for one reason or another. For example you might switch sources or adjust pump setting on a booster or readjust a PRV. By modeling the proposed tweaks prior to making them, you will be able to see the effects of the changes before you get the calls from users and make the necessary adjustments or notifications to avoid customer complaint.

-Simulating fire flows- Extensive fire flow testing on your system can cause disruption to the system and increased oversight (as it is usually an outside contractor connecting to your system). In some situations, it may be appropriate to utilize the fire flow results produced from the model to minimize the number of fire flow test performed on your system.

-Emergency plans- In an emergency situation, a model could help you determine how





“There are some models that will allow you to model complex features such as energy costs “

Hydraulic Model—continued

to get water to your customers if a main transmission line is down, a source is unavailable, or there is some other issue in your system. Rather than waiting for the emergency to occur, you can be proactive and model potential situations now in anticipation of a potential emergency event in the future.

-Trouble shooting problem areas- There are often areas of a system that could use improvement either to increase pressure or flow or something else. Could the area benefit from a looped line or a new pressure zone? You can model different scenarios and possible solutions in an effort to determine how best to correct the problem areas.

-Timing of projects- You are usually aware of the projects that will need to happen as your system grows, but not necessarily the timing of the projects. Is it more important to install a new transmission line or develop a new source first? How many new connections are needed before new infrastructure is needed? A model can give you a better idea of timing and sequencing of your projects allowing you to budget and plan for the future.

-Water Quality and Energy Costs- Some of the more complicated systems might be concerned and want the ability to monitor some of the more intricate details of their systems. There are some models that will allow you to model complex features such as energy costs based on pumping demands or chlorine residuals throughout the system.

Are there scenarios that you can think of that you would like to explore with your water model? Find out what your model is capable of and utilize it to benefit the operation and planning of your system.

Insight of an operator in creating and maintaining an accurate model.

As the operator, you are in the unique position of knowing and understanding your system better than anyone else. Some of that knowledge includes insight on existing infrastructure, trouble spots, operational tweaking, and the needs of your system. You can save time, money, and potential headaches by sharing this information as well as your expectations and desires for the water model with your consultant. Identify the water system’s hydraulic modeling purposes and be an active participant in the process.

-Be aware of the model that you are using. There are a lot of good software programs available. They range in cost and features. Is it important to you that your model be integrated into your GIS system or that it has complex features such as cost analysis? Who owns the software- you or your consultant? Provide input and ensure that you are getting the product that you want.

-Don’t be afraid to be picky as you choose a consultant to build and maintain your model. This is an investment and you want the model built correctly. Ask questions, get recommendations and references. For some of the larger systems it might be beneficial to obtain training to better understand the model and how it works.



“Knowing where you lack information will help you as you interpret the model results.”

Hydraulic Model—Conclusion

-Know and understand the information that has been entered into your model. The more accurate the information input into the model, the more accurate your modeling results. Are your line sizes, type, and lengths from as-builts, GIS, or are they just an educated guess. How are you accounting for your demands- are they stepped to account for peaking and do they vary by user? Are all your sources running continuously at a steady state year round? What are your settings on the booster pumps? You might not have records to enter exact information, but knowing where you lack information will help you as you interpret the model results. You will understand where the model might be weak and where you might need to make adjustments to account for some of the inaccuracies.

-Does the model take into consideration how you run the system? Based on knowledge of the system, every operator has tricks to operate their system more efficiently. Do you pump your system at night to minimize energy peaking costs? Do you utilize different sources seasonally due to demand or water quality concerns? What modifications do you make when running the system? Some of these adjustments may need to be programmed into the model.

-Provide as much information as possible to calibrate the model. Calibration of the model occurs after the system information has been input and things such as roughness coefficients on pipes are adjusted to more accurately simulate your system. Actual field data is needed in order to calibrate the model. This is usually provided in terms of fire flow tests. The more information provided the more accurate the model can be. If possible you should provide data for different operating conditions such as seasonal demands (summer irrigation use, peak hour, times when more or different sources are utilized) as well as providing tests at locations throughout the system including in different pressure zones. It is possible to have the model be inaccurate under some scenarios or at some locations, when it is not calibrated correctly.

As a system operator, you have the ability to provide the information and knowledge to obtain and use an accurate hydraulic model as a tool to improve efficiency of your system and save money.



New Division Staff

Tammy North

Tammy North joined the Division of Drinking Water in August of 2012. She graduated from the University of Utah with a B.S. in Civil Engineering in 2000. Until her move to Drinking Water, Tammy worked for an engineering consulting firm, where she had the opportunity to work on many municipal projects, including many water projects. She is a licensed professional engineer.

Tammy is excited to join the Engineering section of the Division of Drinking Water, where she will help in plan reviews. Thus far, her favorite aspect of the job is being able to help out individual water systems. Two of Tammy's favorite things to do when not working are getting lost in a good book and spending time with family.



Emily Frary

Emily Frary was raised in Provo, UT and she has five siblings. After graduating high school, she moved to Salt Lake to attend the University of Utah. Emily started working with the Rules Section in October and has helped the section with their scanning and data entry.

Emily is studying Chemistry with an emphasis in Materials Science and Engineering, and will graduate in Spring 2014. She loves the challenge that chemistry presents her with, and she hopes to pursue graduate work.

Outside of studying, Emily spends her time hiking and she is also an avid tennis player. She is President of the University of Utah's Organization of Women in Science, and Secretary of the Salt Lake Rotaract Club.



New Division Staff Continued-

Misty Tabor

Misty Tabor is the Division's new Records Manager! If you need to reach her, please call her at 801-536-4190, or reach her by email at mistytabor@utah.gov.

Before coming to DDW I worked for 9 years at Deseret Chemical Depot, located south of Tooele. DCD is a military base, and the mission there was to destroy a large supply of chemical weapons. The mission is complete and they are now working on closure of the chemical plant. I worked in the Document Control Center, Hazardous Waste and the Mustard Campaign Departments. We followed very stringent Army regulations, state regulations and local policies, many of them for records management. Throughout all positions I held, records management importance and standards remained the same and that was a very large portion of my responsibilities along with all other administrative duties. I live in Tooele with my husband of nearly ten years and our two children, our 6 year old boy Loren and 4 year old girl Meah. I enjoy being outdoors with my family, camping, jogging, taking trips and I have recently found a new passion in quilting. Lucky my Grandma is an amazing quilter I am learning from the best!



Samantha Record (Rules Secretary)

Samantha was born and raised in Utah, and although she spent time elsewhere throughout the US for the military, she will always consider this beautiful state home. During her senior year of high school, she enlisted in the Utah Army National Guard, where she spent 6 ½ years as a Helicopter Crew Chief and two years as a Non-Commissioned Officer. When her enlistment contract came up, she decided to move on and pursue other career options. She spends her mornings working with the wonderful staff at the Division of Drinking Water, and her afternoons working at Spoons and Spice Kitchenware in Sandy. She is currently pursuing a degree in Criminal Justice through an online military university, although she is still not sure what she wants to be when she grows up. She loves spending her free time cooking and doing everything DIY- from sewing and crafting to building things and working on cars. She currently lives in sandy with her husband and three beautiful step-children.



Data, Data Everywhere and not a single result in the Database! By Patti Fauver

I know it is frustrating when you think you have done everything right and then BAM! - here comes the nasty letter from the Division (most with my signature). So what's the deal, why can't we get it right?? Well – for starters the Division does get it right most of the time and when we don't – most of the time it is for a few reasons which are easily correctable. This article is intended to provide a list of mistakes which we believe cause the problems and might provide a path forward to solving the lost data problems and minimize frustration both for you (the system) and us (the Division). First – when I state we get it right most of the time, I believe this because we receive approximately 85,000 sample analyses each year and most of them get entered correctly and satisfy the sample schedule in the main database (SDWIS). I know this does not offer any consolation when the data going astray happens to be yours! So on to the list. The most common compliance issues from the Rules Section perspective are:

Follow-up on total coliform positive routine samples

- Nitrate Monitoring
- Deficiency Corrections
- Sample Windows
- Sample Location
- Lab Issues
- Lost Data
- Sample Labeling

Follow-up on total coliform positive routine samples – Some of the requirements date back over 20 years and some have been effective for just over 3 years. Anytime one of the routinely scheduled bacteriological (total coliform) sample is positive – the following steps must be conducted by all systems:

Analyze for E. Coli (done by lab)

Collect 3 or 4 REPEAT samples at the correct locations (upstream, downstream, original site and 4th sample if needed)

Collect a TRIGGERED SOURCE SAMPLE for each groundwater source in operation at the time of the positive sample

The next month (not quarter) ALL systems MUST collect at least 5 samples – In most cases systems will be collecting ADDITIONAL samples to add up to the total of 5 ROUTINE samples.

Later we will discuss sample labeling, but, already you can see a challenge in making sure all the follow-up samples with just the Total Coliform Rule need to be labeled correctly as to the type of sample. My best advice if you have a positive TCR sample is: CALL US – Janet Lee at 801-536-0088, John Oakeson at 801-536-0057 or Elden Olsen at 801-536-4097 – these individuals can explain the samples required as well as how to label the samples

Nitrate Monitoring –This still confuses me – as it is a very simple monitoring requirement!

*Every System (Community, Non-transient non-community, Transient non-community)

*Every Source (groundwater or surface water)

*EVERY YEAR

-No reductions

-No exceptions

Two things here – forgetting to collect the sample and sample labeling cause the biggest problems. BEST ADVICE: Sample the source for nitrate as soon as you turn it on if it is seasonal or place an appointment on your calendar every year to collect the samples due – the yearly list will ALWAYS include nitrate. For sample labeling – the requirement is for the source never the distribution system, therefore, the sample label should always be a source or sample station code. See Sample Labeling handout for Nitrate samples.

Deficiency Corrections –I think the frustration and confusion with this item is the lack of understanding on how once you have made the physical corrections – how the deficiency and its associated points are removed from your IPS report. Without taking a whole page to describe how the SDWIS database works (a challenge even for me!) – The short answer is YOU need to send a correction form into the Division with documentation of the fix in ALL cases. Even if your system just had a sanitary survey.

The IPS correction form is available on the Division's website, you need to fill it out with the deficiency correction information and appropriate documentation. Once the Division receives the form, either the documentation will be sufficient or staff will call for more information. Although it is fairly standard to send the updated IPS report out after corrections are noted in SDWIS - I suggest you actually request an update be sent as well – OR- make use of the Online Reports on our website to verify corrections were completed.

Sample Windows and Sample Locations – Every major water quality rule has monitoring requirements, some are



very specific on WHEN samples are collected, others WHERE samples are collected and some have very specific requirements on BOTH. Some of the requirements are meant to be representative of your distribution system as a whole while others are meant to look at worst case conditions. Please understand if the rule language make specific requirements – samples not meeting the requirements will not be used for meeting the compliance requirements.

*Sample Windows

- Lead & Copper Rule – June through September
- Disinfection By-products – warmest calendar month
- Source Grouping – when all sources in the point-of-entry group are in operation

*Sample Locations

- Highest risk sites
 - #Lead & Copper rule
 - #Disinfection By-products
 - #Asbestos
- Representative of distribution system
 - #Total Coliform rule



The three biggest issues here are improper labeling, collecting at the wrong location and in the wrong window of time. In order to solve this – samples which have a sample window associated with them – the Monitoring Schedule report displays the proper window of time under the “Next Sample Due” column. Please refer to the report to guide your sample collection efforts. As far as the wrong location and sample labeling they probably are the same issue and refer to the Sample Labeling section to follow.

to ensure they are entered properly in the database.

“Lab” Issues –All the sample requirement also come with acceptable analytical method requirements and ultimately laboratory approval criteria. Your job is to look at our list of certified labs (on the website) and pick a laboratory which is certified to conduct the type of analysis your need. Other than conducting the analysis using the approved methods – we have no regulations for laboratories, even this requirement is implemented by the Department of Health for us. In the past some labs have had a problem meeting detection levels specified in the rules but this has not occurred lately.

Issues more often occur with systems believing the lab will send data to the Division and the Division not receiving data. Some labs do send lots of data and some do not send much. If you want direct reporting of data – sign appropriate authorization for the lab to share the data with us. Unless the lab has authorization the will not send the data to us. The laboratory you use is your choice – if you do not feel you are getting the service you deserve – shop for an approved lab that will provide that service.

“Lost” Data – With the huge volume of data the Division receives it is unlikely that we will ever not lose some data somewhere – hopefully we can minimize the occurrence and impact of the data loss. In responding to concerns over repeated submittal of data, here are the most common issues found:

*Improper Sample Labeling (Discussed in detail below)

- Nitrates as distribution samples 200+ samples lost in SDWIS in 2012
- TCR samples – REPEATS, TRIGGERED SOURCE, ADDITIONAL ROUTINES

***Electronic Reporting** – This is both a blessing and a curse – we love receiving data files from the lab which can automatically transfer data into SDWIS – we would not be able to keep up otherwise. However, in receiving data in this manner there is no longer a person screening the analysis – just a bunch of data separated by commas. It is imperative for systems to properly label their samples (see nitrate issue above).

***Email Submissions** – For data which does not come in a lab file or other information required to be reported to the Division, such as the quarterly disinfection report, the monthly surface water report, the Consumer Confidence report, etc – we appreciate you sending electronic copies to DDWReports@utah.gov. This is the fastest way to get data to us – only caveat is below

***Sending to the Wrong Person** – The Rules Section implements 15 major rule packages with 7 different rule managers. In the monitoring requirements we have schedules that range from daily requirements reported monthly to sample collected every 9 years. It is important to send the correct data to the correct person.



-If you are using DDWReports@utah.gov , staff review the emails daily and forward them to the correct staff for you – we ask where possible to send a separate email for each rule and list the type of data in the subject line (i.e., CCR or DBP Quarterly report or Monthly treatment or VOC or Lead& Copper, etc.) This will help with keeping the flow of data correct.

-If you still mail the samples to us – please indicate somehow different sets of data. For example – paper clip the Lead and Copper samples together and the TCR samples separately.

Sample Labeling – ALL SAMPLES SUBMITTED WILL NEED TO BE LABELED WITH 3 CODES! If samples are not labeled correctly, especially with electronic data transfers, they will not credit or satisfy the required sample schedules in SDWIS and will generate violation letters. The first table shows the generic labels based on sample type and location of the sample event. The second is a copy of part of monitoring schedule which illustrates the sample labels printed unique for your system and also alerts you to the sample window where sample need to be collected inside a specific time frame.

*Water System Number UTAH _____

-Facility ID

-Distribution System samples – DS001

*Source or Sample Station - WS ___ or SS ___ or TP ___

*Sample Point ID

-Distribution System samples – DS001 or see DBP system specific list

-Source or Sample Station - WS ___ or SS ___ or TP ___

Type of Sample	Water System ID	Facility ID#	Sample Point ID#
TCR	UTAH _____	DS001	DS001
Lead & Copper	UTAH _____	DS001	DS001
Nitrate Nitrite Volatile Organics SOCs Sulfate Radionuclides Radium 228 Uranium	UTAH _____	TP ___ Or WS ___ Or WS ___	TP ___ (same as facility) Or WS ___ (same as facility) Or WS ___ (same as facility)
Disinfection ByProducts	UTAH _____	DS001	MD ___ or MR ___ See System List
Carbon, Total (TOC)	UTAH _____	See System Specific List or Call DDW	See System Specific List or Call DDW

Sample Monitoring Schedule:

Sample Label

Sample Window

Facility ID	Facility Name	Analyte Name	Sample Count	Sample Type	Sample Frequency	Last Sample	Next Sample Between
DS001	UTAH20005 DISTRIBUTION SYSTEM			Activity Status: A		Sample Label: UTAH20005 DS001	
		ASBESTOS	1	Routine	9Y	09/30/2003	01/01/2011-12/31/2019
		Lead & Copper	10	Routine	3 Years	2011	06/01-09/30 2014
		Disinfection Byproducts	2	Routine	3 Years	09/21/2010	07/01-09/30 2013
SS290	GROUP SOURCE SAMPLING STATION SS290			Activity Status: A		Sample Label: UTAH20005 SS290 SS290	
		NITRATE	1	Routine	Year	09/19/2012	01/01/2013-12/31/2013
		Inorg & Metals	1	Routine	3 Years	09/21/2010	01/01/2011-12/31/2013
		Sodium,Sulfate,TDS	1	Routine	3 Years	09/21/2010	01/01/2011-12/31/2013
		Volatile Organics	1	Routine	6 Years	09/19/2012	01/01/2014-12/31/2019
		Radionuclides	1	Routine	6 Years	09/19/2012	01/01/2014-12/31/2019



Division Initiatives – Following are some of the Initiatives the Division has taken to improve communication and data transfer.

- *Updates to the Monitoring Schedule (see above)
- *Division Mailings
 - At least 2 times per Year
- *On-line Reports at drinkingwater.utah.gov
- *DDWReports@utah.gov – one stop reporting email address checked daily
- *Lab Communication – working with all labs to improve or initiate electronic transfer of data
- *Web based TCR application for small bacteriological labs to implement electronic reporting of TCR data



Steps YOU can take –

- ***PROPER SAMPLE LABELING**
- *Sample during correct sample window
- *Authorize your lab to send your routine sample data to the Division
- *If you Email us data and information
 - Separate different data to different emails
 - State the type of data in the subject line
- *Use the On-line Reports
 - Call us if problems found
- *CALL US with any questions
- *Don't take a violation letter personally
 - If you have the data – DDW is happy to retract the violation
 - Let's talk
- *Follow-up with us during the year. The best time to make sure your data is where it needs to be is one to two months after you have sampled. Go to the online reports and look at your monitoring schedule and IPS to ensure your updates have been made, or contact us directly.

Drinking Water Survey/Questionnaire Contest Winners

The Division of Drinking water developed a questionnaire to get information from the water systems to help us help the water systems and provide better service to them. We had a drawing to encourage participation in the process. Here are the winners of our drawing:

Leland R. Howlett
 Scott Hill
 Mike Wormwood
 Adam Spackman
 David Bunker

Winners at the RWAU Conference
 Everett Taylor
 Andrew Ormsom
 Mark Whitney

Sanitary Survey Kaizen by Renette Anderson

DEQ is using the Lean/Six Sigma process to become more efficient and transparent. This powerful business management strategy has been used by industry for years to eliminate waste and improve the bottom line.

A three day “Kaizen” event has held in July 31-August 2, 2012 at the Department of Environmental Quality to take an “in-depth” look at the sanitary survey process from the perspective of stakeholders involved in the process to objectively look at whether the work could be done more efficiently. Participants represented water system operators, local health departments, DEQ district engineers, the Rural Water Association, and the Division of Drinking Water. The two water system representatives are Mike Carlson and Scott Hill.

On the first day, the group mapped out the “As Is” process – the way it was currently being done - to identify any bottlenecks, inefficiencies, and redundancies. Using that information, the second day was devoted to developing a “To Be” process. Finally, on the last day, focus turned to the steps to be taken over the coming months to implement the “To Be” process.

Discussions were lively at times as each group member both advocated for his or her concerns then worked to listen and understand a perspective or experience that was different. In the end, the group was able to come to consensus in its recommendations to Division Director Ken Bousfield.

Since August, the Kaizen group has continued to meet at least monthly to implement the recommendations:

Increase Process Efficiencies:

Established a formal policy for grouping (bundling) public water systems for survey purposes. Bundling considers such things as ownership and systems that feed in together

Established a rotation/assignment policy which ensures that multiple disciplines (eyes) look at all facilities over time.

Developed a policy to more effectively deal with incomplete surveys. This will be implemented in CY2013. Currently developing measurements to more consistently track – and troubleshoot where needed – the Sanitary Survey process.

Ensure Surveyor Competencies:

Revamping training requirements - including classroom, field experience, and mentoring - to ensure surveyor competencies.

Implementing a process to measure surveyor effectiveness to include feedback from the operators as well as other internal measures.

Better Allocate Resources:

Developing a strategy to improve resource allocations, including people and costs.

Determined an average time required to complete a sanitary survey, based on system type. During the upcoming year, several volunteers will track their time on all surveys performed during the year. This tracking will include travel time as well as dealing with site specific issues that may come up during the survey. The total time for the surveys performed by the volunteers will be compared to the calculated time as noted in the above bullet. From these comparisons between the calculated and the actual times an average “complexity” value will be determined. The calculated value for each water system will be multiplied by the complexity factor to arrive at a projected survey time for each water system.

New Online Training at DDW by Rachael Cassady

The Division of Drinking Water (DDW) is excited to announce that we now have video training presentations on our website. These training videos are 30 minutes or less, and they cover topics from our Rules Section: the life cycle of a violation, monitoring schedule basics, and an update on our source groupings. If you are new to the water industry, training a new employee with your water system, or if you just have questions about our programs then watching these online screencasts can help.

We do not offer CEU credit for the time you spend watching our online training videos unless they are included in a training seminar that you are attending. The purpose of these videos is to familiarize operators with the specifics of how our programs are implemented at DDW. We hope you will benefit from this new section of our website.

To get to our new online training screencasts go to www.drinkingwater.utah.gov. From here click on the Training Screencasts link on the left hand side bar:

The screenshot shows the DDW website interface. At the top, there is a navigation bar with links: DEQ Home | DDW Home | A-Z Index | Boards | Contacts | Laws & Rules | Online Services | Search DEQ. Below this, the breadcrumb path is DDW Home > Programs. The main heading is "Drinking Water Training Screencasts" under the "Rules Section". A list of three training videos is displayed:

- Source Grouping Update:** A video thumbnail showing a cross-section of the ground with wells and a play button. Text above the thumbnail reads: "If more than one well was pulling water from the same aquifer then both wells were 'grouped' for sampling compliance."
- Monitoring Basics:** A video thumbnail showing a computer screen with a play button.
- Life Cycle of a Violation:** A video thumbnail showing a red circular sign that says "Don't PANIC!" with a play button. Text below the thumbnail reads: "at List (ETT) for repeat".

On the left side of the page, there is a vertical navigation menu with the following items: Search DDW, Drinking Water Board, FAQs, Financial Assistance, Laws & Rules, Programs, **Online Reports** (circled in red), **Training Screencasts** (circled in red), Records Request, Emergencies, Blank Forms, Shopping Cart, and About DDW.

This will take you to our videos. Currently we only have three training screencasts, but in 2013 year we will expand it to many more that will cover every section of our programs. Please take a look at the videos we have now and think about the topics that you would like to see in this new section. Send us your feedback and ideas at rcassady@utah.gov, or 801-536-4467, so we can make this suit your needs. We are excited about this new avenue of teaching and communicating with you.

Your IPS Report Is Important to You

by John Oakeson

The Division of Drinking Water regulates all public drinking water systems in the State of Utah. A public drinking water system is defined as a system that has 15 service connections **and/or** serves at least 25 people for 60 days. Systems are classified as community, non-transient non-community, or non-community. A community system is a residential system operated year around, where customers have long term exposure to the drinking water. Community systems have the most stringent sampling requirements. A non-community non-transient system serves the same people for at least 6 months. Examples include industry, schools and churches. A non-community system serves different people for a short term exposure. These systems have the least stringent sampling requirements. There are currently 468 community systems, 69 non-transient non-community, and 467 non-community systems in Utah.

The Improvement Priority System Rule - R309-400, typically refer to as the IPS rule, has been in effect for a number of years. The IPS rule is a measurement tool the Division uses to provide a concise indication of a drinking water system's condition and performance. The IPS report evaluates a number of areas including: water quality, monitoring, public notification, physical deficiencies, operator certification, cross-connection control, drinking water source protection, administrative issues as well as reporting and record maintenance issues.

Demerit points are assessed for deficiencies identified in each of the areas evaluated. The goal is for a water system to have the least amount of IPS points possible. In other words, the more points a system has, the worse off it is. The number of points for each deficiency, monitoring violation, MCL exceedance, etc. is based on the threat to the public health. A system missing a smooth nosed sample tap on a well poses little health risk and would be assessed 1 IPS point. On the other hand a system using an unapproved water source would be assessed 150 IPS points. A confirmed fecal contamination would result in 50 IPS points. For an approved rating a system must have less than the assigned threshold points. The community system threshold is 150 points; a non-transient non-community system must not exceed 120 points; a non-community system cannot exceed 100 points. A water system is assigned one of the following ratings based on their IPS score. An **approved** rating indicates that the public water system (PWS) is operating in substantial compliance with the drinking water rules. A **not approved** rating indicates that the PWS does not fully comply with the drinking water rules as measured by the IPS score. There are a number of systems that exceed the established threshold but are working with the Division to come into compliance with the drinking water rules. These systems can receive a **corrective action rating** if they enter into a corrective action plan with the Division. The corrective action plan identifies the problems and the actions the system must take to address issues noted on the IPS report. The plan also establishes timelines the system must adhere to while addressing the problem (s). As long as a system complies with the established terms and timelines outlined in the compliance agreement, they will remain at corrective action. Once they complete the terms of the agreement they can become an approved system as long as their IPS points are below the threshold. Not approved systems that drop below their respective threshold still having significant deficiencies remaining on their IPS report are not typically changed to an approved status.

IPS points are added for exceeding maximum contaminant levels (MCLs) as identified in R309-200-5 (Primary Drinking Water Standards). These standards include: inorganics and metals, lead and copper, organics, radionuclides, microbiological and disinfection by-products. Failure to meet monitoring requirements set forth in R309-205, 210 and 215 will also result in IPS points. We see a number of common violation problems in this area. One of the most common violations is failure to complete the annual nitrate sampling requirement. Systems are required to collect a nitrate sample from every source in use every year. Some systems are required to collect quarterly nitrate samples. Many systems receive monitoring violations for failure to collect the other source and distribution system samples. The Division provides monitoring schedules to assist a system with keeping on top of required samples. Division staff often hears the complaint that a system has sent in sample results a number of times. They want to know why the Division can't keep things straight. In almost all cases we find that the water system failed to label the samples correctly. All samples must have your public water system (PWS) number (UTAH, followed by the 5 digit number assigned to each specific system), the sample facility identification and specific sample site identified. All distribution system samples are identified as DS001. If you are not receiving credit for microbiological or lead and copper sample analysis, chances are you are not using this sample site ID number. If you are not receiving credit for source samples you are most likely not using the correct sample site ID. Source samples are identified by the PWS number, system facility ID number WS001, WS002 etc., or a group sample source number assigned to the system by DDW. If you have questions regarding labeling of disinfection by-product samples please contact Brad Holdaway at 801-536-0063. Groundwater Triggered source samples should be labeled with the specific source ID (WSXXX) or GWR triggered source group sample site number, beginning with SSG, to receive proper credit. Label these samples as a TG sample. Microbiological monitoring violations are assessed for: failure to collect required monthly or quarterly samples, failure to collect the correct number of samples, failure to collect repeat samples, and for systems taking 5 or less monthly or



IPS continued

quarterly samples - failure to collect the appropriate number of additional samples the following month, or failure to collect triggered source samples when required. IPS points are also assessed for associated public notice violations.

Source samples, disinfection by-product and lead /copper monitoring violation points are resolved once the Division receives the appropriate source samples. The same applies to a ground water triggered source sample. Microbiological sample violations are different. Points assessed for microbiological violations remain in effect for 12 consecutive months or 4 consecutive quarters, whichever applies, before rolling off of your IPS report. Public notice points are resolved when a system sends documentation of their public notice to the Division.

IPS points are assessed for physical facility deficiencies. In most cases these deficiencies are added to the IPS report as a result of physical deficiencies identified during a sanitary survey. In a few cases deficiency points may be added as a result of the Division becoming aware of deficiency or if an administrative action is taken. The number of IPS points assessed for the physical deficiency is based on the seriousness of the deficiency. Public health based deficiencies are assessed a higher number of points than those that don't directly affect public health. Unaddressed significant deficiencies will result in a treatment technique violation which also has associated IPS points.

IPS points for physical deficiencies are resolved once the Division receives official notice that the deficiencies have been corrected. The notice must include some type of physical documentation such as an email, pictures, completed IPS Deficiency Correction Notice, etc. Division staff can't resolve a deficiency based on a telephone call. DDW has requested that any person conducting a sanitary survey report all corrected deficiencies identified on the IPS report to the Division as a part of their completed sanitary survey report. Now that you know about the Improvement Priority System Rule and IPS points, how do the IPS points actually affect you? Each Public Drinking Water System has an IPS score. Some systems actually have a negative score because of few or no deficiencies in addition to having credit points issued. Other systems have several hundred points. One system currently exceeds 900 points. The Division conducts quarterly compliance meetings to discuss system status and enforcement actions. One list discussed is the "Worst 25 List". This is a list of the 25 Utah water systems with the highest IPS scores. These systems are targeted for specific enforcement action by the Division and/or USEPA. During the quarterly Division compliance meeting decisions are made relating the approval rating of a number of a system. A currently not approved system may be taken to an approved rating based on several criteria including their IPS score. Some systems may be downgraded from approved to not approved based on their IPS score. Systems that have a high IPS score who have entered into a corrective action plan with the Division to achieve compliance are given a corrective action rating. A system with a not approved rating not only has that stigma. There are also economic consequences. Many lending agencies will not issue building loans, etc. if the water system in the area is not approved. Please feel free to contact John Oakeson, IPS Rule Manager, at joakeson@utah.gov or 801-536-0057 if you have questions relating to the Improvement Priority System Rule.

Exam Validation Workshop by Kim Dyches

On July 18, 2012 an Exam Validation Workshop was held at the DEQ offices to validate the existing questions in the exam question banks. Operators from several agencies were involved in the review. Steve Blake and Ron Kidd from Jordan Valley Water Conservancy District participated, Blaine Dietrich from Bluffdale City, Scott Anderson from Woods Cross, Bart Simons from Provo City, Rob Jaterka from Magna Water, Keith Hanson from Salt Lake County Service Area #3, Gary Siddoway from Kamas, Jeff Grimsdell from Salt Lake Public Utilities, Jon Jeffries and Darel Gagon from Metropolitan Water District of Salt Lake and Sandy, and Drinking Water staff participated.

Approximately 26 new questions were added to the six different banks. All questions involving new rules will be placed in the exams one year after the rule goes into effect. This gives the trainers time to train the operators and gives the operators time to get familiar with the new rule.

BACKFLOW TECHNICIAN CERTIFICATION / RECERTIFICATION COURSE Utah Schedule

2013

Rural Water Association of Utah 76 East Red Pine Alpine, Utah 84004 Call: (801) 756-5123 Register Online: www.rwau.net/training.html	Class II Tester Certification Class: Sep 16-20, 2013 Utah Co Nov 18-22, 2013 Ogden, UT Class I Certification Dec 10-13, 2013 Ogden, UT	Class II Tester Re-certification Class: Sep 9-11, 2013 Utah Co Nov 13-15, 2013 Ogden, UT Nov 20-22, 2013 Ogden, UT Class I Re-Certification Dec 3-5, 2013 Ogden, UT
Backflow Training Services 2071 West Byron Circle West Valley City UT 84119 Call to Register: (801) 554-6052 Pay Online: www.backflowtrainingservices.com Location: Salt Lake Community College Miller Campus 9750 South 300 West Sandy UT	Class II Tester Certification Class: Mar 18-22, 2013 May 13-17, 2013 Aug 12-16, 2013 Dec 16-20, 2013 Class I Certification Mar 19-22, 2013 May 14-17, 2013 Aug 13-16, 2013 Dec 17-20, 2013	Class II Tester Re-certification Class: Mar 20-22, 2013 May 15-17, 2013 Aug 14-16, 2013 Dec 18-20, 2013 Class I Re-Certification Mar 20-22, 2013 May 15-17, 2013 Aug 14-16, 2013 Dec 18-20, 2013

2013 Water Operator Exam Schedule

April 11, 2013 at 16 exam sites around the State. See the exam application for locations. The exam application deadline for this exam is March 21, 2013.

August 29, 2013 at the Rural Water Fall Conference. Exam applications are due by August 8, 2013. This at the Rural Water Association of Utah's Northern Conference. Contact them by calling 801-756-5123 or the website is <http://www.rwau.net>

November 7, 2013 at 16 exam sites around the State. See the exam application for locations. The exam application deadline for this exam is October 17, 2013.

Online exams can be scheduled by calling the Rural Water Association of Utah at: 801-756-5123.

For training and exam dates: visit or training calendar at:
<http://www.calendarwiz.com/calendars/calendar.php?crid=uwwtccal>

Stage 2 DBP Rule for Small Systems

by Brad Holdaway



Hello water system operators. Where has the time gone? The Stage 2 rule is wrapping up for Schedule 1 and 2 systems (systems over 50,000 population) and begins for schedule 3 and 4 systems (populations less than 50,000) October 1st of this year. Consecutive systems or systems that buy water from another wholesaler are tied to the schedule of the largest system in their water system network.

This rule affects systems in different ways depending on factors such as if your system is ground water or surface water, your system population, if your system is a consecutive system, etc. It can be confusing! A link to help you out is located under the "Quick Reference Guide" located on our website drinkingwater.utah.gov, under "Blank Forms" under the "Disinfection Byproducts" section about 1/3 down the page.

The things you need to know:

- 1) Your system schedule
- 2) Are you a consecutive system
- 3) What is your system population
- 4) If your system is surface water or ground water
- 5) our sample plan and sampling start date (October 1, 2013)
- 6) How many samples do you need to take
- 7) Distribution system sample locations



“Labeling your samples correctly so they get recognized in the state data base “

Labeling your samples correctly so they get recognized in the state data base

Rural Water is hosting several trainings around the state where DDW personnel will help you answer these questions and more. Also, please feel free to contact me. I am often out of the office and the best way to contact me is by email, bholdaway@utah.gov. As always thanks for the safe and high quality drinking water you provide in this wonderful state of Utah!

2013 is the End of a Sampling Period by Rachael Cassady



It is time to check your monitoring schedule and plan now to get your yearly and every three year samples done as soon as possible. In 2009 the Division of Drinking Water (DDW) adopted EPA's standardized monitoring framework. This means that any chemical samples due yearly and every three years are due by December 31, 2013. Nearly all public water systems in the State of Utah have chemical samples due every year and every three years. Chemical samples refer to sulfate, inorganics and metals, VOCs, pesticides, sodium/sulfate/TDS, and radionuclides. It does not include lead and copper or disinfection byproducts.

Third Cycle								
1 st Period			2 nd Period			3 rd Period		
2011	2012	2013	2014	2015	2016	2017	2018	2019

“It is important to call your certified lab and schedule your chemical samples now”

In order not to overwhelm the laboratories at the end of the year it is important to call your certified lab and schedule your chemical samples now. To schedule your sampling you first need a current copy of your monitoring schedule. You can get that by going to the Online Reports link at www.drinkingwater.utah.gov, or you can call DDW at 801-536-4200 and request a copy. On the right hand side of the Additional Monitoring Requirements section look for the Next Sample Due Between dates. If you see a yearly or once every three year sample due by December 31, 2013 you can schedule that sample to be taken now. Call your certified laboratory and arrange to have the sampling done. If you have questions about your monitoring schedule please contact Rachael Cassady at rcassady@utah.gov, or 801-536-4467.

As you take your samples be careful when you fill out the laboratory chain of custody form. That form has a spot on it called Sampling Point or Facility Point. This is where you must clearly put the water system facility number. If this number is not correct on the form we will not receive your data electronically from the lab, and you will receive a violation notice for failure to sample. Your water system facility numbers are found on your monitoring schedule under the Water System Facility column. In this picture the facility code for nitrate, sodium/sulfate/TDS, radionuclides, Volatile Organics (VOCs), pesticides and inorganics and metals is SS171.

Additional Monitoring Requirements

Facility ID	Facility Name	Analyte Code	Analyte Name	Activity Status
DS001	UTAH03004 DISTRIBUTION SY:		Disinfection Biproducts Lead & Copper	A
SS171	GROUP SOURCE SAMPLING S*	1040	NITRATE Sodium, Sulfate, TDS Radionuclides Volatile Organics Pesticides Inorg & Metals	A

After you have taken your required samples and received the results from the lab it is time to check in with DDW to make sure we have a copy of the results. It is always a good idea to contact us before the sampling cycle is over to make sure we have copies of all your data. Mark on your calendar to get another updated copy of your monitoring schedule before December 31, 2013 to be certain everything is recorded correctly.

We're on the Web
www.drinkingwater.utah.gov



Sampling- continued

We are required by EPA to calculate violations for failure to sample in mid-January of every year. In January 2014 we will be determining violations for failure to sample from 2013. Because this happens so soon after the December 31, 2013 deadline, it is extremely important that you take those yearly and every three year samples now. Then we can avoid samples taken in November or December with results that do not make it to DDW in time for the January violation calculation.



If at any point you have questions about finding a current copy of your monitoring schedule, contacting your lab, filling out the chain of custody form, and following up with your updated schedule please contact Rachael Cassady at rcassady@utah.gov, or 801-436-4467. We would much rather help you out during this process than send you a violation notice. Violations for failure to monitor are something we like to avoid. So please call or email with your questions. We are here to help you meet these requirements and prevent violations.

“Violations for failure to monitor are something we like to avoid”

Online Exams a Success by Kim Dyches

The Division of Drinking Water in partnership with the Rural Water Association of Utah has been administering the online exams for a little over a year now. So far there have been over 165 exams administered and the number continues to increase. The online exams have been a big success and the operators have been enjoying the benefits of the online process.



The exam overall process is much like the paper exams. Like the paper exams, you still need to have someone proctor the exam, show photo ID, fill out the appropriate forms, and pay the appropriate fees. However, unlike the paper exams there is no waiting to hear whether or not you passed the exam. Once you submit the exam, you get an immediate score, plus you can print out a temporary certificate to take back to your supervisor to show you passed. You will still get scratch paper to use to write down your math equations etc. We encourage you to bring a calculator, however there is a calculator built into the exam program that you can use.

The exams cost \$120, the extra \$20 is for administering the exam and the security. You can schedule an online exam by phoning the Rural Water Association of Utah at 801-756-5123. If you have questions you can call the afore mentioned phone number or Kim Dyches at 801-536-4202. You can also e-mail Kim at kdyches@utah.gov.


Resolution 1080 x 720 px
File Size 200 kb
www.pondy.pl/stock.com

New Credentialing ID's

by Dale Pierson, Executive Director Rural Water Association of Utah



Utah has long needed credentials for water and wastewater personnel so that they can be identified in emergency situations

Imagine the following scenario:

A huge rainstorm coupled with spring snowmelt has caused rivers, streams and formerly dry washes to overtop their banks causing massive erosion. The erosive action has caused water and sewer lines in proximity to the water courses to be washed away. Valves are covered with mud and debris. Water tanks are draining from water gushing out of broken mains and raw sewage is flowing into the streams adding to the already hazardous situation. Broken gas lines are providing the potential for fires to break out and there will be no water available with which to fight them. Roads and highways into the area have been closed down by law enforcement to prevent people from entering a dangerous area and to stem any possibility of looting. Affected communities don't have enough personnel to deal with all the emergencies and have called on their neighboring communities, the Rural Water Association of Utah (RWAU) and UTWARN for assistance.

The assistance is there and ready to go to work – right on the edge of the disaster area – unable to get past law enforcement officers because they cannot identify themselves as utility workers qualified to be in the area and able to help with the disaster recovery....

Utah has long needed credentials for water and wastewater personnel so that they can be identified in emergency situations in their communities and state wide. Many water systems still do not have identification for their employees. The Division of Drinking Water, UTWARN and RWAU have worked on this problem for a number of years. A solution to the problem has been difficult due to several issues that arise with conflicting needs from various state and federal agencies. Recently, we all stood back, took a look at the situation and decided to make the issue as simple as possible by providing water and wastewater entities with the opportunity to issue their employees with an identification that will be recognized by all other water and wastewater service entities in the state. By taking the issuance of the IDs to the local level most of the interagency concerns go away. If in the future a bigger, better means of identification becomes available we can use it, but in the meantime we can fill the need in a simple easy manner.

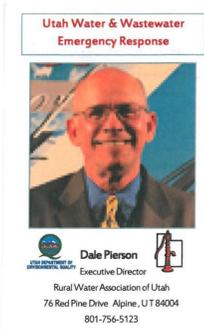
So, here's how it will work:

- *RWAU has purchased the equipment to make photo ID cards. The cost per card will be \$12.00.
- *All ID cards will be driver license size and will be made so they can either be carried in a wallet or hung by a lanyard.
- *All ID cards will look the same except for an entity specific logo. This will enable the ID to be recognized state wide.

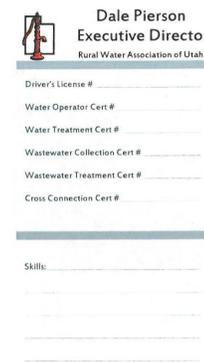


New Credentialing ID's- *continued*

Badge Front



Badge Back



*If the individual to which the ID is issued is wastewater or water certified, a Division of Environmental Quality (DEQ) logo will be included on the ID.

*IDs will be issued to employees by the individual City, Town, District or Company. The issuing entity will be responsible for reclaiming the ID if an employee separates from employment.

*The issuing entity will need to electronically provide RWAU with:

1. A letter stating that they wish IDs provided for the individual or individuals.
2. Passport quality photos of each individual.
3. A copy of the entities' logo.
4. Name and address of the entity.
5. Name and title of each employee that will receive an ID.
6. Driver's license number for each employee that will receive an ID.
7. Water and/or Wastewater Certification numbers along with any other licenses or certifications that the entity wishes to be listed for each individual.
8. Skills that the entity wishes listed for each individual.



*All employees of an entity may receive IDs whether they have water and/or wastewater certifications or not. Employees that are not certified may still have the need to identify themselves from time to time.

*If needed – RWAU may be able to arrange going to the entity to make the IDs.

*We anticipate also making IDs at rural water conferences.

If we can get IDs that are recognizable state wide our response will be much more rapid and the dangers and inconvenience that are experienced by systems and their cus-



Nitrate in Groundwater Project

By Jim Martin

The Division of Drinking Water (DDW), Utah State University (USU), and the Utah Geological Survey (UGS) has begun a project to determine if voluntary best management practices (BMPs) can decrease the concentration of nitrate in a valley fill aquifer in northern Utah.

Background:

What is nitrate? Nitrates is a nitrogen-oxygen chemical unit which combines with various organic and inorganic compounds. Concentration of nitrate is regulated by the DDW and 10 mg/L is the allowable limit in drinking water.

Why are we concerned about nitrate? Infants less than six month of age who drink water with greater than 10 mg/L of nitrate can become seriously ill and, if untreated, may die. Symptoms of what is often called “blue baby syndrome” are shortness of breath and a bluish skin color.

Can nitrate be removed from drinking water? Yes, nitrate can be removed from drinking water through ion exchange, reverse osmosis, and electrodialysis. These methods are effective; however, they are expensive, especially when a source of drinking water, such as a well, is involved.

How does nitrate get into drinking water?

The primary sources of nitrate are fertilizers, septic systems, animal feeding operations, and from natural geologic formations.

The Project:

The question we hope to answer with this project is can voluntary BMPs reduce the concentration of nitrate in a valley fill aquifer?

The Nitrate Project group includes Jim Martin and Mark Jensen from DDW, Paul Inkenbrandt and Janae Wallace of the UGS, and Nancy Mesner of USU.

The DDW, in coordination with the UGS, looked at all the available data regarding the concentration of nitrate in groundwater throughout Utah. These data included analyses from private wells, public drinking water wells, and other wells throughout the state over many years. The nitrate data were projected onto maps using the Nitrate Mapping Tool developed by the UGS and DDW. Nitrate project members Paul and Mark were instrumental in developing the Nitrate Mapping Tool, and Janae supplied a large portion of the data used in the project.

We reviewed the output from the Nitrate Mapping Tool for the statewide data and discussed which areas of the state would be suitable for further review. [Figure 1](#) shows the statewide output from the Nitrate Mapping Tool.

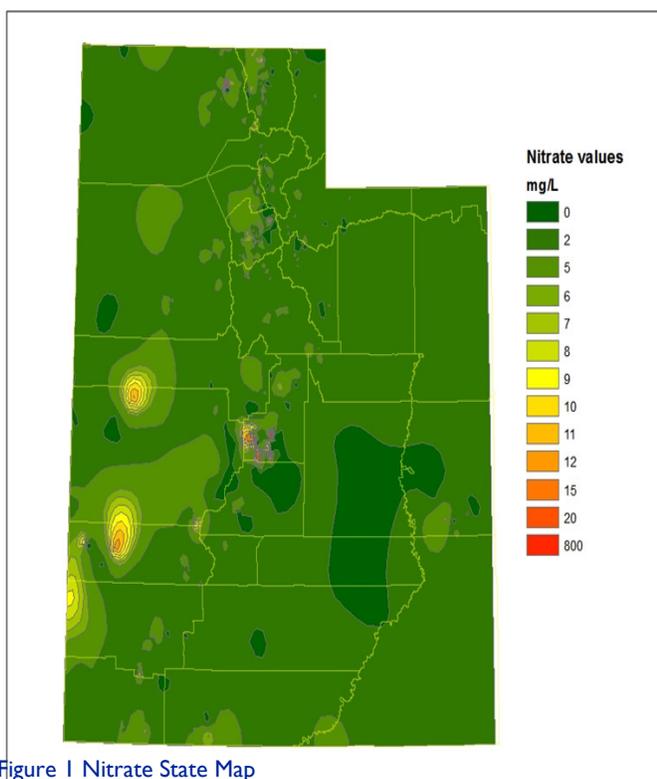


Figure 1 Nitrate State Map
Map of contoured nitrate values (values of 1/1/2007).

After evaluating the state wide data, we narrowed the focus to three potential areas that might fit for further review. (See Figure 2.) Janae helped greatly with this effort due to her previous work on identifying the sources of nitrate in particular areas of the state, whether they were from human and/or animal, fertilizer, or natural in origin. Once these areas were identified we focused in further on which area might be the best to try instituting voluntary BMPs. We ended up choosing the Bothwell-Thatcher (BT) area. As you can see in Figure 3, the concentrations of nitrate are very high in the center to northeast portion the valley. Figure 4 shows the land use in the BT area and the elevated nitrate concentrations in the aquifer coincide with an area of irrigated farmland. From records of past activities it appears that the area of high nitrate has been converted from vegetable farming to commercial sod production. So far, the public supply wells have not been affected by the elevated nitrate in the aquifer; however, it is likely that if activities don't change they will be affected in the future.

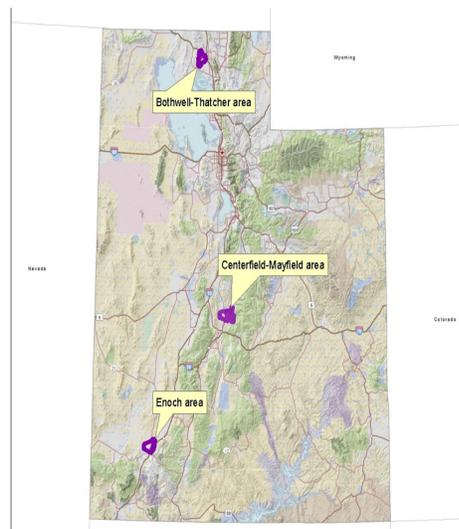


Figure 2
The three areas initially considered for best management practices (BMPs) research were the Bothwell-Thatcher area, the Centerfield-Mayfield area, and the Enoch area.

The next step in the project is for Nancy, with the help of her assistants at USU, to contact the local farmers in the high nitrate area. Once the contacts are made they will discuss fertilizer application rates as well as irrigation rates and see if they are willing to work towards optimizing these through BMPs. Once the BMPs have been instituted, future monitoring of the aquifer for nitrate concentrations will be undertaken to determine if the BMPs actually work.

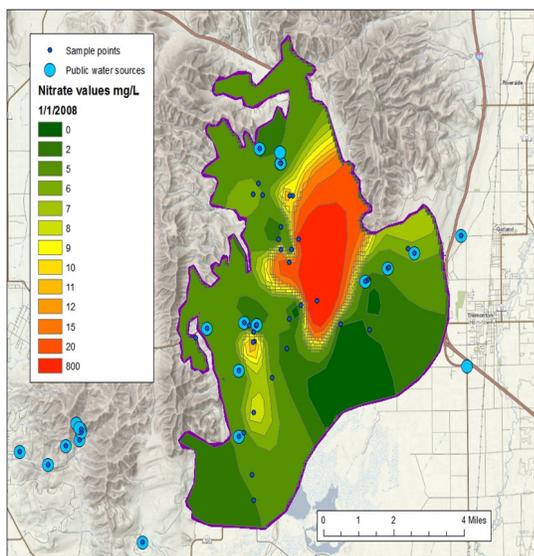


Figure 3 – BT Nitrate Map
Bothwell-Thatcher project area, showing all ground-water sample points used in the Nitrate Mapping Tool, public water sources, and interpolated nitrate values.

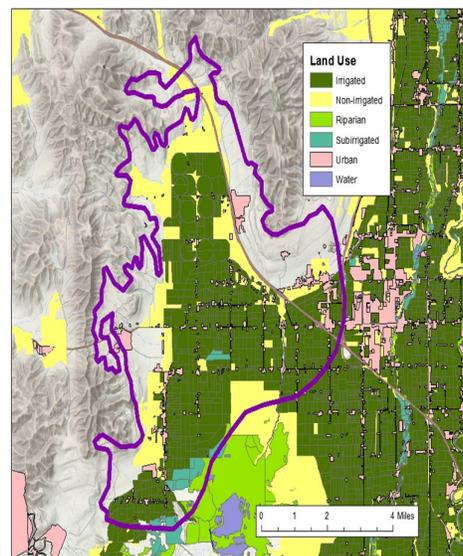


Figure 4 – BT Land Use
Land use within the Bothwell-Thatcher project area.

Please contact Jim Martin, 801-536-4494 or by e-mail at jhmartin@utah.gov if you have any questions.

Standard System Reports Online by Dave Hansen

The following reports are now available online for each water system. All you need to do is go to our web page www.drinkingwater.utah.gov and go to "Online Reports" just under the Drinking Water Tap picture. Once you click on Online Reports you come to this page as you see you must register here or develop an account so you can look at your water system reports

www.drinkingwater.utah.gov/documents/reports

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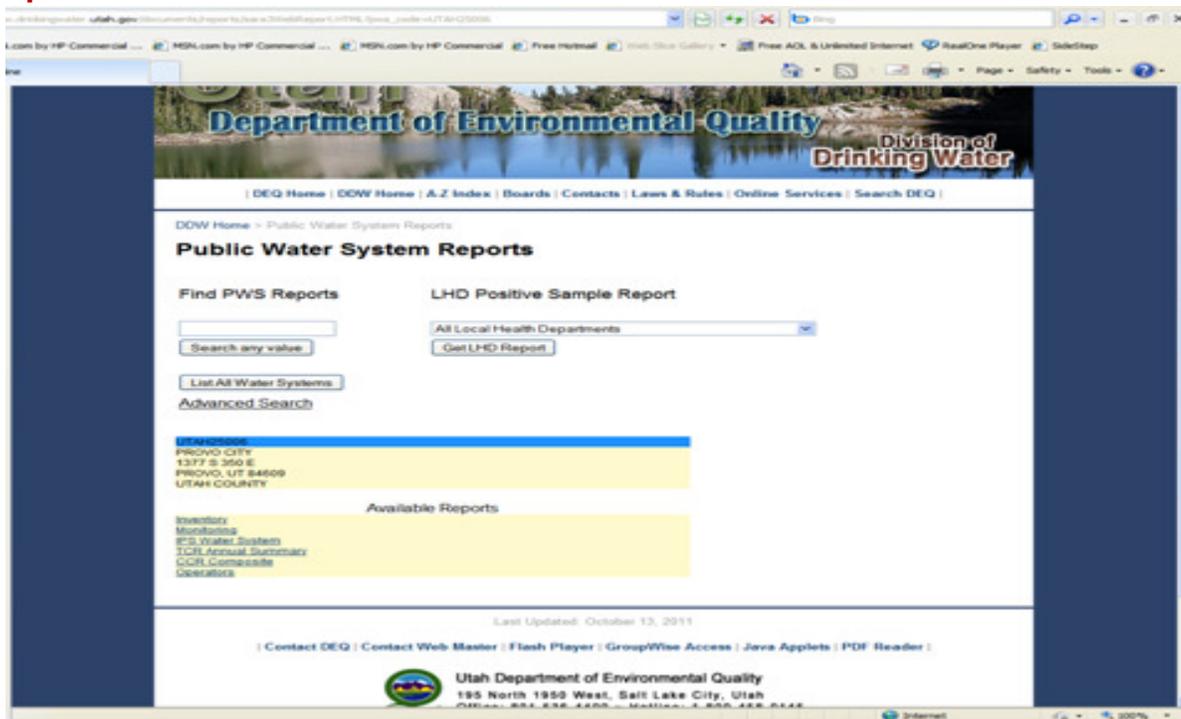
Last Updated: October 13, 2011

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Standard System Reports Online– Continued

Once you enter your public water system ID number it will pull up your water system name, city, state, and reports if you click on [view](#) you'll be able to see what available reports are online for you. There is the **Inventory Report, Monitoring Schedule, IPS Report, TCR Annual Summary, CCR Report, and Operators.**



Take advantage of these online reports it's a great resource and will help you manage your water system better. If you need assistance in getting onto the online reports contact Dave Hansen at 536-4203.

2011 Operator Renewals

The following certified operators have successfully renewed their certificates by attending water-related training in the three-year period 2009-2011. The State of Utah Drinking Water Rules state that these operators must again earn a sufficient number of CEUs during the three-year period January 1, 2012 to December 31, 2014 to be eligible to renew in 2014.

*D=Distribution; T=Treatment; SS=Small System Distribution

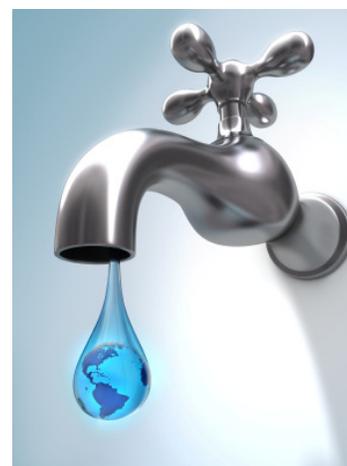
Operator's Name	Cert #	Type of Cert	Employer or Water System
Abel, Roy	25528	SS	Marble Hill Water Company
Adams, Andrew L.	08394	D-II	Jordan Valley Water Conservancy District
Adamson, Charles S.	00467	T-IV	Salt Lake City
Adkins, Marlowe C.	22100	D-II	Richmond City
Aitken, Robert J.	22101	T-IV	Central Utah Water Conservancy District
Aki, Alexander K.	97005	T-IV	Salt Lake City
Aldridge, David M.	99500	D-I	Mid-Valley Estates Water Company
Allen, Bevan H.	92100	T-IV	Holliday Water Company
Allen, Chris	99184	D-IV	Ashley Valley Water & Sewer ID
Allen, Daniel	25038	D-IV	South Jordan City
Allinson, Matt	22501	D-IV	Saratoga Springs City
Allred, Clayton R.	22502	T-IV	Park City
Allred, Darrell A.	99501	D-III	Rocky Ridge Town
Allred, Terry A.	22503	D-II	Rocky Ridge Town
Andersen, Arthur W.R.	23009	SS	Alton Town
Anderson, Blake B.	20066	D-IV	West Bountiful City
Anderson, Blake R.	87760	T-IV	Kearns Improvement District
Argyle, Riley M.	08264	D-I	Garden Farm
Arnold, Jim D.	08297	SS	Boulder Farmstead Water Company
Arnold, Michael S.	84002	D-IV	Sandy City
Astill, Danny J.	96500	D-IV	Murray City
Austill, Kevin Red	96100	D-III	American Fork City
Backman, Gus	92103	D-IV	Salt Lake City
Backman, Randy L.	08298	D-I	Kennecott Utah Copper
Backman, Ronald E.	88501	D-IV	Centerville City
Bair, Robert M.	22104	D-II	Richmond City
Baker, Matthew R.	08262	D-II and T-I	Cedar City
Ball, William S.	08397	D-II	Richmond City
Barker, Martin D.	08299	D-IV	Herriman City
Barnes, Brian S.	99102	D-IV	Taylorville-Bennion Improvement District
Barnes, Dennis G.	86673	D-III	Santaquin City
Barnes, E. Lee	87745	D-IV	Lehi City
Barnett, Timothy S.	96101	T-IV	Bountiful City
Barr, Steven L.	25530	D-IV	Cedar City
Baxter, Paul K.	22105	D-IV	ATK Promontory Plant
Beck, Steven M.	90502	D-IV	Jordan Valley Water Conservancy District
Belliston, Troy L.	99105	D-IV	Granger-Hunter Improvement District
Bennett, Shane D.	93103	D-I	Saratoga Springs City
Beratto, David H.	94505	D-IV	Jordan Valley Water Conservancy District
Bevins, Michael J.	93504	T-II	Water Specialist
Biasi, Aldo G.	25005	D-IV	Parowan City
Bird, M. Scott	99107	D-III	Mapleton City
Black, Rockney B.	96502	D-III	Pleasant Grove City
Blonquist, Brody B.	22003	D-I	Pine Meadow Mutual Water Company
Blymiller, Rick R.	24502	D-IV	Taylorville-Bennion Improvement District
Bohn, Patrick C.	86054	T-IV	Salt Lake City
Boshard, David J.	93506	D-IV and T-IV	North Fork Special Service District
Bowler, Scott L.	99108	D-IV	Saint George City
Bradford, Scott E.	08300	D-II	Millville City
Brems, Jay L.	08301	D-IV	American Fork City
Brewer, Ronald L.	88174	D-IV	Price City
Brinkerhoff, Eric R.	25042	D-IV	WaterPro Inc
Brown, Albert E.	99111	D-I	Metropolitan Water District of SL/Sandy
Brown, Harlow F.	22006	SS	Koosharem Town
Brown, Harold M.	95106	T-IV	Salt Lake City
Bryner, Ross L.	90505	D-IV	Price River Water Improvement District
Buck, Albert K.	88765	D-IV	Tooele City



Budge, Jeffrey D.	95506	T-IV	Water Specialist
Bundy, Bronson C.	08404	D-II	Washington City
Bunker, Eric W.	08405	D-I	Daniel Domestic Municipal Water
Burrows, Merrill K.	25008	SS	Bristlecone Water Improvement District
Burt, David E.	99508	T-I	Canyonlands NP/Needles
Busch, Chad D.	22110	T-IV	Fruitland City
Basic, Ron L.	07126	D-IV	Saint George City
Cain, Barry H.	91105	D-II and T-III	Ashley National Forest
Callaway, Jason P.	25046	D-III	Santaquin City
Callison, James	96105	T-IV	Water Specialist
Callister, Brian J.	97504	D-IV	Jordan Valley Water Conservancy District
Cameron, Max J.	87766	D-III	Payson City
Carlson, Brian W.	99113	D-IV	Hill Air Force Base
Carney, Charles L.	96106	D-IV and T-II	Washington County WCD
Carroll, Garn E.	87810	D-III and T-IV	Bountiful City
Cattelan, Frank	84223	D-I	Echo Mutual Water Company
Chadwick, Nolan J.	08406	D-IV	Sandy City
Chalk, Mark E.	24504	D-IV	Taylorville-Bennion Improvement District
Chamberlain, Steven Michael	25500	SS	Glendale Town
Chappel, James M.	97507	D-IV	Spanish Fork City
Chartier, John L.	08268	D-IV	Water Specialist
Chatwin, Maurice C.	88811	T-II	Heber City
Chavez, Michael E.	08305	D-IV	Riverton City
Cheney, Dale S.	22111	D-IV and T-IV	Summit Water Distribution Company
Childers, Henry F.	85003	D-IV	Washington County WCD
Childs, Donald R.	84225	D-III	Gunnison City
Christen, Ron S.	90106	D-II	Provo City
Christensen, David A.	25009	SS	Fishlake National Forest
Christiansen, Steven Scott	84005	D-IV	Hooper Water Improvement District
Clark, Alan G.	08269	D-I	Erda Acres Water Company
Clark, Bradley S.	24505	D-II	Washington County WCD
Clark, Dan L.	00536	T-IV	Salt Lake City
Clark, Mark H.	90107	D-I	Weber Basin Water Conservancy District
Clark, Stephen C.	08307	D-IV	Granger-Hunter Improvement District
Crafts, Rand J.	08271	D-I	Intermountain Power Service Corp
Clayburn, Scott	85015	D-III and T-IV	Park City
Clements, Christopher M.	22113	D-IV and T-IV	Orem City
Coburn, Terry R.	84325	D-IV	Layton City
Cole, Craig K.	08308	SS	Mtn Dell Café & Golf Course
Collett, Christopher R.	08270	SS	Greendale Water Company
Cooke, Donavon	08309	D-I	Cedar Point Water Company
Cossey, Val E.	89109	D-IV	Jordan Valley Water Conservancy District
Covey, Max L.	99509	T-IV	Jordanelle Special Service District
Crafts, Rand J.	08271	D-I	Intermountain Power Service Corporation
Crane, Kevin R.	25047	D-IV	Jordan Valley Water Conservancy District
Crawford, Jon M.	21509	D-IV	Kearns Improvement District
Creamer, J. Lynn	84443	D-I	Nordic Mtn Water Company
Cummings, Ross J.	84335	D-III	Fillmore City
Curtis, Becky Y.	08370	D-II	Goshen Town
Dalton, Lester C.	24010	T-IV	Washington City
Dalton, Matthew C.	25048	D-II	Lehi City
Danielson, Marvin V.	22114	D-IV and T-II	Water Specialist
Davis, Hal	92109	D-IV	Ogden City
Davis, Larry Mike	90507	D-IV	Vernal City
Davis, Michael Lynn	22562	SS	Canyon Fuel Company
Davis, Philip L.	20011	D-II	Bryce Canyon National Park
Dawdy, Timothy L.	20081	D-IV	Hill Air Force Base
Dawson, Ron C.	98114	D-IV	Taylorville-Bennion Improvement District
Day, G. Thomas	08371	T-I	Sorrel River Ranch
Dayton, Barry D.	08313	D-IV	American Fork City
Decker, David K.	99511	D-IV	Draper City
Defa, Jody J.	98115	D-IV and T-III	Timber Lakes Water SSD
DeJong, Frank	99118	D-IV	Kearns Improvement District
Deras, Michelle M.	08324	T-IV	Washington County WCD
Desmarais, Jason P.	22115	D-II	Sandy City
Devey, Daryl L.	87804	D-IV	Central Utah Water Conservancy District



DeVries, Michael J.	98511	D-IV	Metropolitan Water District of SL/Sandy
Deware, Allan W.	99512	D-I	Erda Acres Water Company
Dilello, Anna	98116	D-IV	Sandy City
Dietrich, Blain R.	20082	D-IV	Bluffdale City
Dilello, Anna	98116	D-IV	Sandy City
Doolan, Timothy E.	88098	D-IV	Ogden City
Dotson, Timothy M.	24545	D-IV	Saint George City
Douglas, Shane W.	95110	D-IV	South Ogden City
Doyle, Jason J.	22117	D-I	Kennecott Utah Copper
Drummond, Brad L.	98118	D-IV	Saint George City
Duggin, Michael D.	08408	D-I	Daniel Municipal Water
Eggett, Brett K.	91110	T-IV	Bountiful City
Ekker, Terry K.	08315	T-II	Blanding City
Elliott, Lynn R.	22181	D-I	Eureka City
Elmer, Jeffrey F.	99120	D-IV	Roy City
Emerson, Rocky G.	96112	D-IV	Sandy City
Engleman, Philip J.	93111	D-II and T-IV	Green River City
Erickson, Kim W.	22509	T-IV	Kennecott Utah Copper
Espinoza, Todd N.	99121	D-IV	Ogden City
Estrada, James K.	25052	D-IV	Jordan Valley Water Conservancy District
Eva, Wade A.	25053	D-III	Santaquin City
Evans, Stephen C.	22510	D-IV	Salt Lake City
Eyre, Jon F.	88511	T-IV	Salt Lake City
Famuliner, Larry L.	21117	D-IV	Farmington City
Farnsworth, Bruce A.	94517	D-IV	Orem City
Farrer, Nathan L.	25537	D-IV	Granger-Hunter Improvement District
Fausett, Beau B.	07221	D-II	Price River Water Improvement District
Favero, Adam D.	25054	D-IV	West Point City
Fenn, Kevin W.	87724	D-IV and T-IV	Taylorsville-Bennion Improvement District
Fisher, Lance R.	98120	D-IV	Taylorsville-Bennion Improvement District
Fjelstrom, Craig S.	08410	D-IV	Kearns Improvement District
Fleming, Daniel A.	84238	D-IV and T-IV	Blanding City
Fletcher, Alma D.	08411	SS	Cannonville Town
Flores, Richard J.	20086	T-IV	Salt Lake City
Folkman, Lee G.	00254	D-IV and T-III	Weber Basin Water Conservancy District
Folkman, Mike S.	21517	T-IV	Summit Water Distribution Company
Fox, Matthew J.	23095	D-IV	Bona Vista Water Improvement District
Franklin, Jon R.	08412	T-IV	Central Utah Water Conservancy District
Fraser, Jonathan G.	08295	D-II	Honeyville City
Freeman, William L.	24014	T-II	Wendover City
Fritz, Ken J.	86664	D-IV and T-IV	Metropolitan Water District of SL/Sandy
Fulgham, Paul C.	88129	D-IV	Tremonton City
Fuller, David W.	22118	D-IV and T-IV	Summit Water Distribution Company
Fulton, Stephen C.	99518	D-IV	Roy City
Gale, Troy A.	96114	T-I	Clay Basin Camp
Gallegos, Michael R.	99519	D-IV	Ogden City
Garbett, Fred L.	25511	SS	Eureka City
Gardiner, Bruce A.	22011	SS	New Harmony City
Gardner, David A.	00466	T-IV	WaterPro Inc
Garrison, Raymond H.	22559	D-IV	South Jordan City
Gee, Martha	89130	D-III	Mountain Regional Water SSD
George, Brett A.	84759	SS	Bryce Woodlands
Gines, Kayson K.	07223	D-IV	Bountiful City
Gines, Phares K.	08274	D-II	Woodland Mutual Water Company
Gines, Rick G.	21124	T-II	Mountain Regional Water SSD
Glenn, David L.	00641	D-IV and T-IV	Ivins City
Gonzales, Clarence L.	93007	D-I, D-II, T-III	US Magnesium LLC
Goodell, John E.	25015	SS	Best Friends Animal Society
Goodrich, Jerry W.	84246	D-III and T-III	Tridell Lapoint WID
Goodwin, Bret L.	21521	D-IV	Metropolitan Water District of SL/Sandy
Gossett, Collin H.	08321	D-II	Hill Air Force Base
Grace, Bryan S.	22012	D-II	Spanish Fork City
Grace, Cody J.	97124	D-IV	Provo City
Graham, Ron P.	08276	SS	Sigurd Town
Grammer, Brad C.	99522	T-IV	Central Utah Water Conservancy District
Gray, Lane D.	90113	D-IV	Orem City



Green, Daniel H.	22123	D-II	Fruit Heights City
Green, Duane C.	88120	D-IV	Riverton City
Green, Kevin M.	08322	T-IV	Weber Basin Water Conservancy District
Green, Michael E.	93517	D-III	Pleasant Grove City
Griffiths, Derek M.	25085	D-II	Milford City
Grimsdell, Jeffrey L.	92119	D-IV	Salt Lake City
Grundy, Stanley R.	99523	D-IV	Jordan Valley Water Conservancy District
Gubler, Douglas	93519	D-III	LaVerkin City
Gunderson, Jared D.	98123	D-IV	Water Specialist
Gunn, Dennis M.	22185	D-IV	Coalville City
Gurske, Jeff J.	08325	D-II	Sandy City
Haas, Merrill A.	93521	D-IV	Orem City
Haile, Jeffrey L.	21524	D-IV	Water Specialist
Hall, Gary M.	98514	D-III	Kanab City
Hamilton, Dustin R.	08326	D-IV	Jordan Valley Water Conservancy District
Hans, Paul D.	99524	T-I	Springdale Town
Hansen, Anne K.	25512	D-IV	South Jordan City
Hansen, Douglas A.	92508	T-IV	Holliday Water Company
Hansen, Garrett	91115	D-III	Castle Valley Special Service District
Hansen, Kimberly A.	08374	SS	Solitude Ski Resort
Hansen, Steven B.	08328	T-IV	Jordan Valley Water Conservancy District
Hanson, Keith J.	89510	T-IV	Salt Lake County Service Area #3
Harold, Philip D.	99131	D-I	Genola Town
Hart, Robert S.	25515	SS	Pine Mountain Mutual Water Company
Hartline, Craig A.	08415	D-I	Glen Canyon NRA Bullfrog
Harwood, Gary R.	84254	D-III	Helper City
Haslam, John S.	90117	T-IV	Salt Lake City
Hatch, David L.	84043	D-IV and T-IV	Ashley Valley Water & Sewer ID
Hatch, Ray M.	99132	D-I	Centerville City
Hatch, Roger K.	00354	D-III	Central Utah Water Conservancy District
Henry, Amy L.	08417	SS	Camp Roger YMCA
Herbert, Lorin K.	23104	D-IV	Ogden City
Hilbert, R. Jeffrey	84212	D-IV	Jordan Valley Water Conservancy District
Hilbert, Richard W.	86213	T-II	Park City
Hill, Tracy L.	99134	D-IV	Provo City
Hills, Kim	00190	T-III	Salt Lake City
Hindes, Robert W.	99135	D-III	Clearfield City
Hirayama, Colin M.	06047	D-IV	Metropolitan Water District of SL/Sandy
Hobbs, Travis R.	24111	T-I	Garden City
Hodson, Keith D.	95120	D-III	Water Specialist
Hodson, Paul A.	00148	D-IV	Water Specialist
Hoff, Marvin T.	22128	D-I	Kennecott Utah Copper
Hoffman, Leland S.	07142	D-IV	Metropolitan Water District of SL/Sandy
Hogan, Donald Brent	25017	SS	South Rim Water System
Hogan, John P.	25001	D-II	Kanosh Town
Hogan, Matthew C.	25018	SS	South Rim Water System
Holt, Wayne D.	22015	SS	Venice Ward Church
House, Brian R.	93143	D-I and T-I	Garden City
Howard, Matthew L.	99528	D-IV	Roy City
Howell, Geoffrey B.	08375	T-IV	Weber Basin Water Conservancy District
Hoyt, Jeffrey H.	98518	T-I	Kane County Water Conservancy District
Hughes, Slade R.	08277	D-I	Veyo Culinary Water Association
Huish, Joe P.	25057	T-IV	Central Utah Water Conservancy District
Hunt, Jason S.	08418	D-II	Sandy City
Hunter, Gary S.	08278	D-I	Deseret Chemical Depot
Hunter, Rulon Keith	08330	D-IV	Herriman City
Hunting, Terrill W.	89117	D-IV and T-IV	Central Utah Water Conservancy District
Hutcheon, A. Jack	98127	D-IV	Taylorville-Bennion Improvement District
Hutchings, Larry	86684	D-III	Hurricane City
Ipson, Blaine	23016	SS	Country Estates HOA
Ireland, Andrew P.	08279	SS	Best Friends Animal Society
Israelsen, Harold J.	00405	T-IV	Weber Basin Water Conservancy District
Iverson, Kelby B.	23164	T-II	Diamond Ranch Academy
Jacobson, John E.	22131	D-IV	Midvale City
James, William K.	22519	T-IV	Jordan Valley Water Conservancy District
Jaques, Rodney B.	08332	D-IV	Layton City



Jeffries, Jonathan L.	24113	D-IV Metropolitan Water District of SL/Sandy
Jeffer, Charles	00535	D-IV and T-IV Water Specialist
Jensen, Jonathan P.	99139	D-IV Ogden City
Jensen, Raymond L.	25020	SS Brooklyn Tapline Company
Jensen, Stewart A.	25058	D-II Centerfield City
Jensen, Tyler A.	08419	T-IV Weber Basin Water Conservancy District
Jerominski, Paul E.	99141	T-IV Park City
Jessen, Dallan J.	99530	D-I Harmony Heights Water Company
Jessen, Darrow H.	99531	SS Harmony Heights Water Company
Jessop, Dan O.	96129	D-IV Kaysville City
Johnson, Brandon	08420	D-II Spanish Fork City
Johnson, John L.	94525	T-II Canyonlands NP Island in the Sky
Johnson, Jordan C.	08421	D-I Springville City
Johnson, Robert W.	20527	D-IV and T-IV Mountain Regional Water SSD
Johnson, Russell K.	22191	SS Geneva Rock Products
Johnson, Ryan R.	24021	D-IV White City
Jones, Brad L.	99142	D-IV Logan City
Jones, Stephen C.	99143	D-IV Orem City
Jones, Tim L.	22212	D-IV Saint George City
Jones, Zane T.	94136	D-IV Cedar City
Jorgensen, Theodore S.	23006	SS Silver Lake Company
Judd, Daren W.	22213	D-IV Saint George City
Juergens, John J.	26045	D-III Enoch City
Keller, Adam B.	08333	D-IV Farmington City
Kendall, Bert G.	06016	D-III Moroni City
Kende, Albert S.	98128	D-IV Summit Water Distribution Company
Kennard, Matthew M.	22135	D-III Heber City
Kertamus, R. Joel	84016	D-III Grantsville City
Kesler, Larry D.	94528	T-I South Jordan City
Kimball, Richard J.	00007	D-IV Metropolitan Water District of SL/Sandy
Knight, Brett J.	09459	D-IV Smithfield City
Kofford, Danny T.	00638	D-IV Price River Water Improvement District
Kopfman, William R.	92131	D-IV and T-IV Hill Air Force Base
Krajnyak, Andrew J.	21536	T-IV Price River Water Improvement District
Lambson, Ivan G.	21136	T-IV Kennecott Utah Copper
Lance, Jeffrey C.	22017	D-IV Saint George City
Larkin, Brent S.	25022	D-IV Saint George City
Larkins, Howard J.	92132	D-IV Layton City
Larsen, Dean L.	97144	D-III USDA Forest Service
Lawson, John S.	96519	T-IV Kearns Improvement District
Leavitt, Judy P.	08334	SS Gunlock Special Service District
Leslie, Darrell	22019	SS HAFB Lakeside Range
Limb, Chad M.	89516	D-IV Beaver City
Lindt, Trevor W.	08422	D-III Price City
Linford, Kirt J.	20531	D-IV Ogden City
Lofley, Blane D.	89120	T-III Castle Valley Special Service District
Lofley, Keith	89121	D-III Castle Valley Special Service District
Lovato, John D.	08423	D-IV North Salt Lake City
Lovato, Sam D.	94144	D-II Centerville City
Love, G. Sullivan	90122	D-IV Orem City
Loveland, Bruce L.	22522	D-IV Granger-Hunter Improvement District
Luddington, Mark W.	08335	D-II Moab City
Mabey, Brad G.	25059	T-IV Jordan Valley Water Conservancy District
MacArthur, Kyle P.	24521	T-IV Park City
MacIntosh, Wayne S.	24063	D-IV Saint George City
Malieitulusa, Setefano A.	08424	D-II Sandy City
Manglona, PedroJose A.	21043	D-II Hill Air Force Base
Martin, Travis B.	08336	D-IV West Jordan City
Martin, Van J.	88845	D-IV Summit Water Distribution Company
Mason, George R.	99538	SS Central Iron Co Water Conservancy District
Massey, Flayne	90143	D-II Jensen Water Improvement District
Matheson, Jeffery E.	99539	T-IV Metropolitan Water District of SL/Sandy
Mathis, Rex B.	99148	D-IV Central Utah Water Conservancy District
Matthews, Howard D.	08337	D-I Kennecott Utah Copper
Matthews, Kipp M.	00760	D-IV Sandy City
Maxwell, James J.	22021	SS Hanna Water & Sewer Improvement District



May, Harley	07157	D-IV Saint George City
McClanahan, Richard D.	08338	SS Manti-LaSal National Forest
McClellan, Clark L.	98524	D-IV and T-IV Central Utah Water Conservancy District
McDonald, Nick J.	25560	T-IV Jordan Valley Water Conservancy District
McEown, Jayne S.	25060	SS Fishlake National Forest
McNeely, Troy L.	22022	D-II Honeyville City
Meadows, Bryan K.	22198	D-I and T-III Green River City
Medina, Jesus	08429	D-II Washington City
Memmott, Mark L.	25558	SS Pine Mountain Mutual
Mergist II, Adam B.	08382	D-II Heber Valley Camp
Meyerhoffer, Chad L.	25061	SS Weber Memorial Park
Middlemas, Robert K.	25519	SS Utah State Parks/Antelope Island
Millard, Bart C.	22200	D-I East Zion Special Service District
Miller, Alan W.	93122	D-IV Water Specialist
Miller, Geoffrey A.	25520	D-IV Utah State University
Miller, Hal R.	22214	D-IV and T-IV Metropolitan Water District of SL/Sandy
Miller, John Bryant	84277	D-II Herriman City
Miller, John Rocky	07160	D-IV West Bountiful City
Miller, Marinda M.	25559	D-IV Granger-Hunter Improvement District
Miller, Robert W.	24525	D-IV Saint George City
Minch, Steve J.	08339	D-IV Jordan Valley Water Conservancy District
Mitchell, Duane C.	92137	D-IV Metropolitan Water District of SL/Sandy
Mitchell, Kenneth G.	99151	D-IV Park City
Monroe, Jason D.	25521	D-III Clinton City
Montes, Gerardo M.	99546	D-IV and T-IV Ogden City
Morris, Kendall A.	25025	D-I Acme Water Company
Morzelewski, David F.	88111	T-IV Bountiful City
Mouritsen, Dustin C.	98145	D-IV Santa Clara City
Muhlestein, Shyloh	20118	D-IV Lehi City
Murphy, Terry A.	25522	D-I Green Hills Water & Sewer District
Myers, Kurt R.	92512	T-IV Central Utah Water Conservancy District
Myers, Robert S.	07236	T-IV Washington City
Naranjo, Michael J.	99154	D-IV Layton City
Nedesky, David A.	25063	D-IV Central Utah Water Conservancy District
Nelson, Bradley D.	25545	T-IV Weber Basin Water Conservancy District
Nelson, Clayten J.	22142	D-III River Heights City
Nelson, Paul W.	92514	D-II Perry City
Nelson, Robb D.	99547	D-IV Orem City
Nicholas, Kelly T.	25546	D-I Corinne City
Nielsen, Corey W.	99156	D-III Hyrum City
Nielsen, Dennis M.	97151	D-IV Taylorsville-Bennion Improvement District
Nielson, Jerry O.	93123	D-IV WaterPro Inc
Norton, Grant D.	22144	D-IV Sandy City
Ochoa, Joseph A.	25548	D-III Enoch City
Ohler, Brian R.	93532	T-IV Deseret Power
Olpin, Mark L.	08437	D-III Heber City
Olson, James G.	25064	T-IV Metropolitan Water District of SL/Sandy
Olson, Stacie	08342	D-IV Riverton City
O'Neal, John T.	08383	D-I Paragonah Town
Orchard, Theo R.	87735	D-IV and T-IV Orem City
Ovard, Brent G.	22560	D-I Henefer Town
Paddock, Shane D.	92167	T-IV Jordanelle Special Service District
Palmer, Marty L.	22145	D-III Nephi City
Paxman, Scott W.	93535	T-IV Weber Basin Water Conservancy District
Perry, Ryan W.	08343	D-IV Granger-Hunter Improvement District
Petersen, Ben L.	99164	D-IV Orem City
Peterson, Randy E.	08440	D-IV Bluffdale City
Peterson, Thomas D.	21547	D-IV Ogden City
Peterson, William A.	08344	T-I My Sentinel Property Management
Phippen, Robert E.	25027	D-II Bear River Water Conservancy District
Pickering, Elmo W.	22027	SS American Pacific Corp
Pitcher, David O.	93127	T-IV Central Utah Water Conservancy District
Pollock, James G.	25028	D-IV Washington City
Potts, Dennis A.	84587	T-IV Salt Lake City
Poulsen, John E.	08384	T-IV Jordan Valley Water Conservancy District
Pratt, Kenneth W.	22029	SS American Pacific Corp



Preece, Abby Jo	99553	D-IV	Weber Basin Water Conservancy District
Prescott, Brandon J.	07241	D-IV	Ogden City
Prince, Robert L., Jr.	86635	D-IV	Ogden City
Pugsley, David R.	25523	D-II	Water Specialist
Pugsley, Tyler D.	96145	D-III	Brigham City
Quinn, Raymond L.	23540	T-II	North Emery Water Users SSD
Quitter, Jim E.	25029	SS	Fremont Indian State Park
Raber, Robert W.	00647	D-IV	Salt Lake City
Rasmussen, Neil	25067	D-IV	South Jordan City
Rasmussen, Shannon C.	08441	D-III	Water Specialist
Reese, Timothy D.	08285	T-II	Washington City
Reynolds, Casey J.	99555	D-I	Rocky Ridge Town
Rhoades, Leon L.	08385	D-II	Heber Valley Camp
Richardson, Billy J.	22219	SS	Eastland Special Service District
Richins, Corey L.	08364	D-IV	Clinton City
Richins, Jedediah K.	22216	D-IV	Washington City
Richins, Ken	96529	D-IV	Hurricane City
Ricketts, Scott R.	95143	D-II	Washington Terrace City
Riding, Alan K.	87749	D-IV	Delta City
Rino, Eugene A.	25069	SS	Whispering Pines Water Company
Robbins, Brett F.	24084	T-IV	WaterPro Inc
Roberts, Gaylen D.	25031	D-I	Camperworld Trust
Roberts, John W.	99557	D-II	Water Specialist
Roberts, Michael D.	08286	SS	Sigurd Town
Roberts, Rick R.	08287	D-II	Washington City
Roberts, Wendle J.	25549	SS	Wales Town
Robertson, Jeremy C.	22536	D-IV	Riverton City
Robinson, Gerri L.	95144	D-II	Ogden City
Robinson, James D.	08347	D-I	Caineville Town
Robinson, Keith	84706	D-III	Kanab City
Robison, Leland D.	08348	D-IV	South Jordan City
Romero, Ross	08349	D-II	Washington City
Rosendaal, Neil C.	22203	SS	Swiss Alpine Water Company
Rose, Jerry W.	08350	SS	Holly Refining & Marketing Company
Roth, David B.	22149	T-I	Metropolitan Water District of SL/Sandy
Roybal, Shelly	22204	D-I	Gorgoza Mutual Water Company
Rubalcaba, Jose J.	08443	T-II	Salt Lake City
Rueckert, Jonathan A.	25551	D-IV	North Salt Lake City
Rydalch, Keith F.	08288	D-II	US Magnesium LLC
Sabey, Rick C.	93129	D-IV	Wallsburg Town
Sadler, Dennis W.	20545	D-IV	Mt Regional Water Special Service District
Sanchez, Ruben E.	22150	D-IV and T-II	Kearns Improvement District
Sarvela, Mark H.	08444	D-IV and T-IV	Metropolitan Water District of SL/Sandy
Sawatzki, David J.	08386	D-II	Water Specialist
Scofield, Rusty	22152	D-III	Tremonton City
Scow, Gary W.	84029	D-IV	Price River Water Improvement District
Searcy, Dale K.	84297	D-IV	Roy City
Searle, JaiDe	26135	T-II	Mt Regional Water Special Service District
Shafer, Robert D.	89133	D-IV	South Ogden City
Shaw, Cary D.	00723	D-IV	Jordan Valley Water Conservancy District
Shiner, Terry C.	90150	D-I	Vernal City
Shoop, Christopher W.	22540	D-I	Buena Vista Community
Shumway, Corbin D.	08446	D-I	Springville City
Siddoway, Gary N.	22541	D-II	Kamas City
Simons, Bart	84061	D-IV	Provo City
Slack, Randy J.	97165	D-IV	LaVerkin City
Slade, Karl R.	98534	D-IV	Taylorville-Bennion Improvement District
Slagowski, Mark E.	84300	D-IV	Bountiful City
Slater, Jeremy D.	08362	D-IV	Orem City
Slaugh, Bryce	91138	D-III	Price City
Slaugh, Wesley S.	25071	SS and T-I	Clay Basin Camp
Smith, Brannen W.	07170	D-IV	WaterPro Inc
Smith, Gordon L.	90132	D-II	Metropolitan Water District of SL/Sandy
Smith, Lonnie M.	99170	D-IV	Layton City
Smith, Sheldon J.	08351	D-I	Ogden City
Smolka, Dee T.	08352	D-IV	Granger-Hunter Improvement District



Smout, Travis W.	08448	D-II	Timber Lakes Water Special Service District
Snook, Kenneth H.	00561	T-IV	Price River Water Improvement District
Snow, Troy J.	25073	D-IV	Pleasant Grove City
Solomon, Phillip T.	90134	D-IV and T-III	Saint George City
Sorensen, Eric S.	07171	D-IV	Metropolitan Water District of SL/Sandy
Sovine, Mark K.	25074	D-III	Grand Water & Sewer Service Agency
Spackman, Adam D.	08449	D-IV	Granger-Hunter Improvement District
Spackman, David A.	87740	T-IV	Jordan Valley Water Conservancy District
Spens, Paul J.	23134	D-IV	Weber Basin Water Conservancy District
Steed, Joshua D.	22155	D-IV	Layton City
Steel, Vern S.	07173	T-IV	Water Specialist
Stephens, Corbett K.	08388	D-IV	Elk Ridge City
Stevens, Bobby V.	08450	D-I	Meadows Ranches Water Company
Stewart, Rickey L.	25075	D-IV	Roosevelt City
Stock, Ronald A.	98155	D-IV	Taylorville-Bennion Improvement District
Stokes, Brandon P.	22156	D-IV and T-IV	Park City
Stoneman, Don R.	95540	D-II	Spanish Fork City
Stratton, Steven B.	08290	D-I	Kolob Recreation Association
Straw, Mack A.	08363	D-III	Eagle Mountain City
Strickland, Fred A.	22547	T-IV	Metropolitan Water District of SL/Sandy
Stringham, Daniel D.	93547	D-I	Laketown City
Sudar, Gary M.	08354	T-IV	Central Utah Water Conservancy District
Sudar, Jonathon E.	08355	T-IV	Central Utah Water Conservancy District
Sulser, Kirk L.	99173	D-III	Timberlakes Water Special Service District
Sulser, Lynn J.	96152	D-IV	Jordanelle Special Service District
Sundberg, Marlin K.	92154	D-IV and T-IV	Holliday Water Company
Surrage, Val	25076	D-II	Taylor-West Weber Water District
Swasey, Daniel K.	25077	D-II	East Duchesne Culinary WID
Tabor, Robert W.	25078	D-II	Dugway Proving Grounds
Taveapont, Don C.	93548	T-I	Uriah Heeps Springs
Taylor, Marvin R.	84377	D-IV	South Salt Lake City
Terrell, Linson C.	97168	D-IV	Kearns Improvement District
Thackeray, Alan R.	99175	D-IV and T-IV	Jordan Valley Water Conservancy District
Thanasilp, Savidtri	22550	T-IV	Jordan Valley Water Conservancy District
Tietje, Matthew J.	98539	D-IV	Metropolitan Water District of SL/Sandy
Tom, Pat	24538	D-IV	Metropolitan Water District of SL/Sandy
Toomer, Casey L.	25079	T-III	Castle Valley Special Service District
Totten, Robert S.	25552	T-II	Springdale Town
Trimble, Johnny D.	86609	D-IV and T-IV	Jordan Valley Water Conservancy District

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